The Effects of *Heterosigma akashiwo* Blooms on a Microzooplankton Community

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Abstract

The Raphidophycean flagellate, *Heterosigma akashiwo,* is a phytoplankton that forms red tides in both the Puget Sound and the Strait of Georgia. *H. akashiwo* blooms are known for their detrimental effects on the farming of Atlantic salmon in this region. Some studies have shown that these blooms have profound effects on the planktonic community, especially tintinnid ciliates; this is noteworthy as microzooplankton exert significant grazing pressure in many coastal systems. This field study monitored environmental conditions, autotroph growth rate and microzooplankton grazing rate within the Burrard Inlet near Port Moody, British Columbia, from June 12 until July 11, during which two *H. akashiwo* blooms took place. I used the dilution incubation technique to measure autotroph growth and microzooplankton grazing rates, and then a size-fractionated incubation technique to determine the extent to which different sizes of microzooplankton graze on the plankton community. I also collected and preserved samples for the identification of dominant species in the planktonic community, estimating biomass and monitoring abundance of primarily *H. akashiwo* and microzooplankton grazers. These data will be used to determine the effects of *H. akashiwo* on the microzooplankton community. Preliminary data indicate a decrease in microzooplankton grazing during bloom conditions; however, microzooplankton counts will help reveal whether this is due to a change in the grazer community composition, an overall decrease in grazer abundance, or the behavior or inability of grazers to feed on *H. akashiwo.*